

**REMARKS**

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

**I. CLAIM STATUS AND AMENDMENTS**

Claims 9-18 are pending in this application and stand rejected.

Claims 9-18 are amended.

Claims 9 and 16 are amended to specify the proportion of conductive fibers as supported by the disclosure, for example, at page 3, top paragraph, and page 5, top paragraphs.

Claim 11 is amended to change "metal allow" to "metal compound" as supported by the disclosure, for example, at page 3, last paragraph.

Claim 16 is amended to remove the term "usual."

Claims 9-18 are also amended in a non-narrowing manner to make editorial revisions to better conform to U.S. claim form. Such revisions include: replacing the "whereby" language with "wherein"; revising the beginning of the claims to recite "A" or "The" and revising the claim language to provide proper antecedent basis throughout the claims.

New independent claim 19 has been added which corresponds to previous claim 16, but is not written as a product-by-process claim.

No new matter has been added by the above claim amendments.

Claims 9-19 are pending upon entry of this amendment.

The specification is amended to include appropriate section headings to conform to U.S. practice. No new matter has been added.

Applicants are submitting the present Amendment without prejudice to the subsequent prosecution of claims to some or all of the subject matter which might be disclaimed by virtue of this response (although none is believed to be), and explicitly reserve the right to pursue some or all of such subject matter, in Divisional or Continuation Applications.

Applicants thank the Examiner for the careful examination of this case and respectfully request reexamination and reconsideration of the case, as amended. Below Applicants address the rejections in the Office Action and explain why the rejections are not applicable to the pending claims as amended.

## **II. INDEFINITENESS REJECTION**

Claims 11, 13 and 16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons in items 2-4 on page 2 of the Office Action.

This rejection is respectfully traversed.

In reply to item 2, Applicants have amended claim 11 to change "metal allow" to "metal compound" to clarify the language

as supported by the disclosure, for example, at page 3, last paragraph.

Applicants respectfully submit that the present amendment overcomes this concern in item 3. As discussed in the disclosure (see for instance, pages 3 and 5), the filler can consist of pure fibers and/or particles, and also of mixtures of different fibers and/or particles or of combinations of uniform or mixed fibers and/or uniform or mixed particles, which are present jointly with the metal compound melting in the range between 100°C and 400°C in the hybrid as a fiber network. As such, it is clear that the particles or mixture of fibers and particles incorporate with the metal compound to form this fiber network. Based on such, it is believed that the skilled artisan would clearly understand how the particles relate to the fiber network.

As noted above, claim 16 is amended to remove the term "usual."

The claims are thus believed to be clear, definite and have full antecedent basis. This rejection is believed to be overcome, and withdrawal thereof is respectfully requested.

### III. ANTICIPATION REJECTIONS

#### 102(b) rejection over IWASE

Claims 9-18 were rejected under 35 U.S.C. § 102(b) as anticipated by IWASE (US 4,882,227) for the reasons in items 2-3 on pages 3-4 of the Office Action.

This rejection is respectfully traversed.

It is well established that to anticipate a claim, a cited prior art reference must disclose or suggest each and every element of the claimed invention. See, M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2131.

Applicants respectfully submit that IWASE fails to disclose or suggest each and every element of independent claims 9 and 16, namely, that the electrically conducting and/or metallic filler is present in the claimed metal/plastic hybrid in the form of a conductive fiber and/or particle in a proportion of at least 30% by weight.

IWASE discloses a conductive resin composition comprising a low-melting point metal. However, due to a problem solved by the present invention, it is essential to have a low-melting metal which is free of lead, in order to avoid toxicological risks of the resin.

Moreover, as shown from col. 3, lines 59-62, it is essential for the resin in IWASE to not have conductive fibers greater than 30% weight. In this regard, IWASE states "if the content of the conductive fiber exceeds 30 weight% flowability

and other properties of the conductive resin composition are degraded." (See line 55 of col. 3.) This stands in contrast to the amended claims 9 and 16 (and new claim 19), which require the electrically conducting and/or metallic filler to be present in the form of a conductive fiber and/or particle in a proportion of at least 30% by weight. It is believed that the metal/plastic hybrid of amended claims 9 and 16 (and new claim 19) distinguishes over the disclosure in IWASE.

For this reason, the anticipation rejection over IWASE falls, because IWASE cannot be said to disclose or suggest this feature of the amended claims. Thus, claims 9, 16, and 19, and all claims dependent thereon, are novel and patentable over IWASE.

Thus, the above 102(b) rejection over IWASE is untenable and should be withdrawn.

**102(b) rejection over ITO**

Claims 9-10 and 12-17 were rejected under 35 U.S.C. § 102(b) as anticipated by ITO (US 4,582,661) for the reasons in items 4-5 on pages 4-5 of the Office Action.

This rejection is respectfully traversed.

The metal/plastic hybrids of independent claims 9, 16, and 19 require: thermoplastic, a metal compound melting in the range between 100°C and 400°C, and an electrically conducting and/or metallic filler. Applicants respectfully submit that ITO fails to disclose or suggest a composition including a low-

melting compound/alloy with the conductive fibers. The mere fact that the low melting compound/alloy is combined with a conductive fiber distinguishes the metal/plastic hybrid of claims 9 and 16 over the teachings in ITO.

Further, it is submitted that Office is wrong when it states that a metal with an organic compound would be an organo-metallic compound. This is so because the term is reserved for chemical compounds containing bonds between carbon and metal.

Additionally, the Office is in error when it says that being embedded would be the same as the network. The network according to claims is a network of copper fibers with low-melting alloy network building points. The network arises due to the fact that the copper fibers and the low melting metal alloy result in one phase when melted.

For these reasons, the anticipation rejection over ITO falls, because ITO cannot be said to disclose or suggest the above-noted features of independent claims 9, 16, and 19. Thus, claims 9, 16, and 19, and all claims dependent thereon, are novel and patentable over ITO.

Thus, the above 102(b) rejection over ITO is untenable and should be withdrawn.

**102(b) rejection over KATSUMATA**

Claims 9-18 were rejected under 35 U.S.C. § 102(b) as anticipated by KATSUMATA (US 5,554,678) for the reasons in items 6-7 on pages 5-6 of the Action.

This rejection is respectfully traversed.

Similar to IWASE, KATSUMATA fails to disclose or suggest the claimed metal/hybrid plastic in which the electrically conducting and/or metallic filler is present in the form of a conductive fiber and/or particle in a proportion of at least 30% by weight.

KATSUMATA discloses (see col.1, lines 66-67, as well as col.2, lines 1-2), that "when the conductive fiber is more than 30 weight %, the moldability deteriorates to result in an uneven dispersion of the fibers, which than cannot provide a practical molded article".

As such, KATSUMATA fails to disclose a metal/hybrid plastic in which the electrically conducting and/or metallic filler is present in the form of a conductive fiber and/or particle in a proportion of at least 30% by weight.

Thus, claims 9, 16 and 19, and all claims dependent thereon, are novel and patentable over KATSUMATA.

Thus, the above 102(b) rejection over KATSUMATA is untenable and should be withdrawn.

#### IV. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



---

Jay F. Williams, Reg. No. 48,036  
209 Madison Street, Suite 500  
Alexandria, VA 22314  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

JFW/jr